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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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03/20/2006

Arnold Mattheus

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EXAMINER

TRAN, DZUNG D

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/530,628	<b>Applicant(s)</b> MATTHEUS ET AL.	
	<b>Examiner</b> Dzung D. Tran	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 23-27, 29-33 and 35-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-27, 29-33 and 35-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 23-27, 29-31 and 33, 35, 38-42, 45-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Sasaoka et al. US 2001/0048798.

Regarding claim 23, Sasaoka discloses in Figures 7-8, a device for adjusting the chromatic dispersion in an optical transmission system, the device comprising:

an optical element 51 having a temperature-dependent chromatic dispersion, the optical element disposed along an optical transmission path within a receiver 220;

a device 54 (i.e., temperature measuring unit) for measuring an ambient temperature of at least one section of the optical element (i.e., temperature inside of the casing 500) to generate a measured value and

a device 52 for adjusting at least one of a temperature and a temperature distribution of at least one region of the optical element for providing a predefined chromatic dispersion of the optical element, the device adjusting in response to the

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measured value (paragraph 0054) wherein the device for adjusting includes a heating device (paragraphs 0042, 49).

Regarding claim 24, Sasaoka discloses wherein the optical element includes a material that exhibits an essentially monotonic dependence of the chromatic dispersion upon its temperature (paragraphs 0041, 0052).

Regarding claim 25, Sasaoka discloses wherein the optical element includes a material which exhibits a dispersion coefficient that has an inverted sign compared to the dispersion coefficient of the optical transmission system (paragraphs 0039, 0041).

Regarding claim 26, Sasaoka discloses wherein the optical element includes an optical fiber and the optical fiber is a glass fiber (i.e., DCF 51; see Figure 7).

Regarding claim 27, Sasaoka discloses wherein the device for adjusting at least one of the temperature and the temperature distribution includes a temperature-control device (Figure 7, temperature control 52).

Regarding claim 29, Sasaoka discloses a chromatic dispersion monitor operative to measure chromatic dispersion (Figure 7, chromatic dispersion control unit 55, paragraph 0054).

Regarding claim 30, Sasaoka discloses at least two optical elements having a temperature-dependent chromatic dispersion, which are assigned to separate inputs and outputs; and the device for adjusting at least one of a temperature or a temperature distribution operative to adjust a joint temperature or temperature distribution of at least one region of the at least two optical elements (see Figure 8).

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Regarding claim 31, Sasaoka discloses in Figures 7-8, an optical transmission system comprising:

- a transmitter 210 for transmitting an optical signal;

- a receiver 220 for receiving the optical signal from the transmitter, the transmitter coupled to the receiver via an optical element defining an optical path 241, 242, wherein the optical element includes a temperature-dependent chromatic dispersion 221; and at least one device 500, disposed within the receiver, for adjusting the chromatic dispersion of the optical element, the device including:

- a device 54 (i.e., temperature measuring unit) for measuring an ambient temperature of at least one section of the optical element to generate a measured value; and

- a device 52 for adjusting at least one of a temperature and a temperature distribution of at least one region of the optical element for providing a predefined chromatic dispersion of the optical element, the device adjusting in response to the measured value (paragraph 0054) wherein the device for adjusting includes a heating device (paragraphs 0042, 49).

Regarding claim 33, Sasaoka discloses wherein the receiver includes: at least one device for measuring the chromatic dispersion (Figure 7, chromatic dispersion control unit 55, paragraph 0054).

Regarding claim 35, Sasaoka discloses wherein the heating device regulates the temperature as a function of a signal that corresponds to the measured value of the chromatic dispersion (Figure 7, paragraphs 0054, 0042, 49).

Regarding claim 38, Sasaoka discloses in Figures 7-8, a method for adjusting the chromatic dispersion in an optical transmission system, the method comprising:

a device 54 (i.e., temperature measuring unit) for measuring an ambient temperature of at least one section of the optical element 51 having a temperature-dependent chromatic dispersion, the optical element disposed along an optical transmission path within a receiver (220 of Figure 8);

a device 52 for generating a measured value based on the measured ambient temperature and adjusting, in response to the measured value, at least one of a temperature and a temperature distribution of at least one region of the optical element for providing a predefined chromatic dispersion of the optical element (paragraph 0054), wherein adjusting is effected using a temperature chamber so that the ambient temperature of at least one section of the optical element and its surroundings are negligible (Figure 7, paragraphs 0054, 0042, 49).

Regarding claim 39, Sasaoka discloses wherein the chromatic dispersion in the optical transmission system is measured and at least one of the temperature and the temperature distribution is adjusted as a function of the measurement (paragraph 0054).

Regarding claim 40, Sasaoka discloses wherein the chromatic dispersion in the optical transmission system is ascertained by measuring the temperature at least one location in the optical transmission system (see figure 8).

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Regarding claim 41, Sasaoka discloses wherein the step of adjusting further comprises: compensating for the chromatic dispersion in the optical transmission system (by dispersion compensating fiber 51 and chromatic dispersion control unit 55, paragraph 0054).

Regarding claim 42, Sasaoka discloses wherein the adjusting the at least one of a temperature and a temperature distribution of the optical element is as a function of the adjustment of at least one further element having a temperature-dependent chromatic dispersion in the optical transmission system (Figures 7-8, paragraphs 0052, 0054).

Regarding claim 45, Sasaoka discloses wherein the optical element is provided to compensate a value of the chromatic dispersion of the optical transmission system to be reach so that in response to suitable temperature increases, the value is reached (Figures 7-8, paragraphs 0052, 0054).

Regarding claim 46, Sasaoka discloses wherein the optical element includes a material which exhibits a dispersion coefficient that has an inverted sign compared to the dispersion coefficient of the optical transmission system (paragraphs 0039, 0041).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaoka US 2001/0048798 in view of Danziger US 2002/0006257.

Regarding claims 36 and 37, Sasaoka discloses at least two devices for adjusting the chromatic dispersion of the optical transmission system that are disposed one after the other along the optical path being connected (see Figure 8). Sasaoka does not specifically disclose the two devices for adjusting the chromatic dispersion of the optical transmission system that are disposed one after the other along the optical path being connected via an optical monitoring channel to a computer device for ascertaining the settings of the device.

Danziger discloses the devices for adjusting the chromatic dispersion of the optical transmission system that are disposed one after the other along the optical path being connected via an optical monitoring channel to a computer device for ascertaining the settings of the device (paragraph 0047).

At the time of the invention was made, it would have been obvious to one of ordinary skill in the art to include the well known optical monitoring channel taught by Danziger in the chromatic dispersion compensation device of Sasaoka for transmitting the temperature and dispersion information. One of ordinary skill in the art would have been motivated to do that in order for the controller to adjust the temperature



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5. Claims 32 and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaoka et al. US 2001/0048798 in view of Sasaki US 6,771,904.

Regarding claims 32 and 43-44, Sasaoka does not specifically disclose a device for feeding a test signal for measuring the chromatic dispersion or at least one section of the optical transmission system by feeding and evaluating a test signal. However, modulating the test signal and sending the test signal from the transmission site is well known in the art as shown in Figure 1 of Sasaki.

At the time of the invention was made, it would have been obvious to one of ordinary skill in the art to implement the test signal generator in the transmitter of Sasaoka. One of ordinary skill in the art would have been motivated to do that in order to send the test signal over the system for adjusting the temperature of the chromatic dispersion compensation element.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 23-27, 29-33, 35-46 have been considered but are moot in view of the new ground(s) of rejection.

Sasaoka reference is used to reject in the Non-Final Office Action dated 09/22/2008. Applicant argument dated 03/23/2009 that the Sasaoka reference is not believed to identically disclose a device for adjusting at least one of a temperature and a temperature distribution of at least one region of the optical element for providing a

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predefined chromatic dispersion of the optical element, the device adjusting in response to the measured value.

At that time, Examiner over look Sasaoka reference and agreed that Figures 1 and 2 of Sasaoka reference does not show the device adjusting in response to the measured value. However, Figure 7 of Sasaoka reference (another embodiment) shown a device for adjusting at least one of a temperature and a temperature distribution of at least one region of the optical element for providing a predefined chromatic dispersion of the optical element, the device adjusting in response to the measured value.

Now, with the newly added limitation, Sasaoka reference again is used to reject the claims limitations of the present invention.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vanderpuye Kenneth, can be reached on (571) 272-3078. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Primary Examiner, Art Unit 2613